

PATENT COOPERATION TREATY

From the
INTERNATIONAL PRELIMINARY EXAMINING AUTHORITY

To: Cohausz & Florack Patent- und Rechtsanwälte (24) Bleichstrasse 14 D-40211 Düsseldorf Tyskland	<div style="font-size: 2em; font-weight: bold; margin-bottom: 10px;">PCT</div> <div style="display: flex; justify-content: space-around; align-items: center;"> <div style="text-align: left;"> <p style="font-size: 1.2em;">27.2.06</p> <p style="font-size: 1.2em;">26.3.06</p> </div> <div style="text-align: center;"> <p>WRITTEN OPINION OF THE INTERNATIONAL PRELIMINARY EXAMINING AUTHORITY</p> <p>(PCT Rule 66)</p> </div> </div> <div style="display: flex; justify-content: space-between; align-items: center; margin-top: 10px;"> <div style="border: 1px solid black; padding: 2px;"> Date of mailing (day/month/year) </div> <div style="font-size: 1.2em;">9 -02- 2006</div> </div>
Applicant's or agent's file reference WY/sd031186WO	REPLY DUE within 45 days from the above date of mailing
International application No. PCT/IB2004/000164	International filing date (day/month/year) 22-01-2004
Priority date (day/month/year)	
International Patent Classification (IPC) or both national classification and IPC See Supplemental Box	
Applicant Nokia Corporation et al	

1.	<input type="checkbox"/> The written opinion established by the International Searching Authority: <div style="display: flex; justify-content: space-around; align-items: center;"> <input checked="" type="checkbox"/> is <input type="checkbox"/> is not </div> considered to be a written opinion of the International Preliminary Examining Authority.
2.	This <u>second</u> (first, etc.) opinion contains indications relating to the following items: <div style="margin-top: 5px;"> <input checked="" type="checkbox"/> Box No. I Basis of the opinion <input type="checkbox"/> Box No. II Priority <input type="checkbox"/> Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability <input type="checkbox"/> Box No. IV Lack of unity of invention <input checked="" type="checkbox"/> Box No. V Reasoned statement under Rule 66.2(a)(ii) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement <input type="checkbox"/> Box No. VI Certain documents cited <input type="checkbox"/> Box No. VII Certain defects in the international application <input type="checkbox"/> Box No. VIII Certain observations on the international application </div>
3.	The applicant is hereby invited to reply to this opinion. <div style="margin-top: 5px;"> When? See the time limit indicated above. The applicant may, before the expiration of that time limit, request this Authority to grant an extension, see Rule 66.2(e). How? By submitting a written reply, accompanied, where appropriate, by amendments, according to Rule 66.3. For the form and the language of the amendments, see Rules 66.8 and 66.9. Also For the examiner's obligation to consider amendments and/or arguments, see Rule 66.4bis. For an informal communication with the examiner, see Rule 66.6. For an additional opportunity to submit amendments, see Rule 66.4. If no reply is filed, the international preliminary examination report will be established on the basis of this opinion. </div>
4.	The final date by which the international preliminary report on patentability (Chapter II of the PCT) must be established according to Rule 69.2 is: <u>22-05-2006</u>

Name and mailing address of the IPEA/SE Patent- och registreringsverket Box 5055 S-102 42 STOCKHOLM Facsimile No. 46 8 667 72 88	Authorized officer Sara Thulin /itw Telephone No. 46 8 782 25 00
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WRITTEN OPINION OF THE
INTERNATIONAL PRELIMINARY EXAMINING AUTHORITY

International application No.
PCT/IB2004/000164

Supplemental Box

In case the space in any of the preceding boxes is not sufficient.
Continuation of: Cover sheet

INTERNATIONAL PATENT CLASSIFICATION (IPC) :

H03D 7/14 (2006.01)

WRITTEN OPINION OF THE
INTERNATIONAL PRELIMINARY EXAMINING AUTHORITY

International application No.

PCT/IB2004/000164

Box No. I Basis of the opinion

1. With regard to the language, this opinion has been established on the basis of:

- ☒ the international application in the language in which it was filed
- ☐ a translation of the international application into _____,
which is the language of a translation furnished for the purposes of:
- ☐ international search (Rules 12.3(a) and 23.1(b))
- ☐ publication of the international application (Rule 12.4(a))
- ☐ international preliminary examination (Rules 55.2(a) and/or 55.3(a))

2. With regard to the elements of the international application, this opinion has been established on the basis of (*replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this opinion as "originally filed."*):

- ☒ the international application as originally filed/furnished
- ☐ the description:
- pages _____ as originally filed/furnished
- pages _____ received by this Authority on _____
- pages _____ received by this Authority on _____
- ☐ the claims:
- pages _____ as originally filed/furnished
- pages _____ as amended (together with any statement) under Article 19
- pages _____ received by this Authority on _____
- pages _____ received by this Authority on _____
- ☐ the drawings:
- pages _____ as originally filed/furnished
- pages _____ received by this Authority on _____
- pages _____ received by this Authority on _____
- ☐ a sequence listing and/or any related table(s) – see Supplemental Box Relating to Sequence Listing.

3. ☐ The amendments have resulted in the cancellation of:

- ☐ the description, pages _____
- ☐ the claims, Nos. _____
- ☐ the drawings, sheets/figs _____
- ☐ the sequence listing (*specify*): _____
- ☐ any table(s) related to the sequence listing (*specify*): _____

4. ☐ This opinion has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).

- ☐ the description, pages _____
- ☐ the claims, Nos. _____
- ☐ the drawings, sheets/figs _____
- ☐ the sequence listing (*specify*): _____
- ☐ any table(s) related to the sequence listing (*specify*): _____

WRITTEN OPINION OF THE
INTERNATIONAL PRELIMINARY EXAMINING AUTHORITY

International application No.

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Box No. V Reasoned statement under Rule 66.2(a)(ii) with regard to novelty, inventive step or industrial applicability;
citations and explanations supporting such statement

1. Statement

Novelty (N)	Claims	_____
	Claims	_____
Inventive step (IS)	Claims	<u>1-11</u>
	Claims	_____
Industrial applicability (IA)	Claims	_____
	Claims	_____

2. Citations and explanations:

Documents cited in the International Search Report:

D1: US 20030129958 A1

D2: EP 0410295 A

D3: KASSIM A K ET AL: "Tail current flicker noise reduction in LC VCOs by complementary switched biasing" ICM 2003

D4: US 4392112 A

Document D1 discloses a mixer having low noise, controllable gain and/or low supply voltage operation. The mixer comprises a reference current source, a programmable gain radio frequency transconductance section and switching quad transistors (see page 2 and figure 6).

Document D2 discloses a single-ended chopper stabilized operation amplifier. A switching, averaging process, chopper stabilisation, is used to remove flicker noise (see the whole document).

Documents D3 and D4 discloses similar methods for removing flicker noise.

Document D1 is regarded as being the closest prior art to the subject matter of independent claim 1. The subject matter of claim 1 differs from what is previously known in document D1 in that modulating means are arranged for modulating a flicker noise produced by said active mixer load away from the signal band of the signal output by said down conversion mixing component. This solves the problem with removal of flicker noise generated by the active load, from the output signal of the mixer. However, this is previously known in document D2. Applying a switching, averaging process, chopper stabilisation, is equivalent to the modulation process described in claim 1.

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Supplemental Box

In case the space in any of the preceding boxes is not sufficient.

Continuation of: BOX V

A modification of the previously known closest prior art, document D1, with the use of what is known in document D2 will result in a device such as described in independent claim 1. Since document D1 and D2 relate to the same technical field a modification of the closest prior art is considered obvious to a person skilled in the art.

The invention according to claim 1 is considered to lack an inventive step.

The subject matters of claim 2 and 3 are previously known in D2.

The additional details added in claims 4-10 are considered obvious to a person skilled in the art.

The invention according to claims 1-10 is not considered to involve an inventive step.

The subject matter of claim 11 corresponds to the apparatus in claim 1. Since claim 1 lacks an inventive step, claim 11 is, for the same reasons, also considered to lack an inventive step.